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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/829,535	04/22/2004	Larry J. Verbowski	710220-002	7312

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EXAMINER	
MCCREARY, LEONARD	

ART UNIT	PAPER NUMBER
3616	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/02/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/829,535

Applicant(s)

VERBOWSKI, LARRY J.

Examiner

Leonard J. McCreary, Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12, 16, 18-28 and 31-34 is/are rejected.
- 7) ☒ Claim(s) 13-15, 17, 29 and 30 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s).

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-34 stand rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,635,958 to Yonemoto to US 4,243,247 to Kataoka. Yonemoto discloses a torsion bar suspension for an automobile comprising the following:

- a. A suspension assembly in an automobile vehicle comprising: a support frame 450; a control arm 500 movable relative to said support frame; a torsion bar 300 connected to said control arm for resisting movement of said control arm relative to said support frame; an adjustment lever 100 connected to said torsion bar for placing said torsion bar in torsion; a torsion bar connection 320 between said adjustment lever and said torsion bar for connecting said adjustment lever to said torsion bar at a plurality of primary drive positions 325 at first angular increments relative to one another; and an indexing system 600 for positioning said adjustment lever at a plurality of intermediate drive positions at second angular increments (claim 1.)

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b. An adjusting mechanism 610 for pivoting said adjustment lever to increase the amount of torsion in said torsion bar (claim 18.)

c. An adjustment lever 100 for applying torsion to a torsion bar 300 for resisting movement of a control arm 500 relative to a support frame 450 in a vehicle; said adjustment lever comprising: a torsion bar connection 320 for connecting said adjustment lever to the torsion bar at a plurality of primary drive positions 325 at first angular increments relative to one another; and an indexing system 600 for positioning said adjustment lever at a plurality of intermediate drive positions at second angular increments (claim 19.)

d. A frame bracket for applying torsion to a torsion bar 300 for resisting movement of a control arm 500 relative to a support frame in a vehicle or similar environment, and comprising: a body 100 having a pivot portion 130 at one end thereof, a tip portion 122 at another end thereof, and a central lever portion 120 extending between said pivot and tip portions (claim 31.)

2. Yonemoto does not teach an indexing system operatively disposed between the torsion bar and the adjustment lever in the form of an independent hub. Kataoka discloses a suspension height-adjusting mechanism in a torsion-bar suspension system and teaches the following:

e. An indexing system 64 operatively disposed between and directly interconnecting said torsion bar connection 62 and said adjustment member 54 for positioning said adjustment member at a plurality of intermediate drive

positions at second angular increments, said second angular increments being smaller than said first angular increments (figs 6, 8, 9) (claims 1, 19.)

f. Said indexing system includes a hub 64 independent of a frame bracket and including said torsion bar connection to said torsion bar at said first angular increments (claims 2, 20.)

g. Said indexing system includes a hub connection between said hub 64 and a frame bracket 60 to position said hub angularly relative to said frame bracket at said second angular increments (claims 3, 21.)

h. Said one of first angular increments defines a primary radial and offset from said primary radial by an offset angle (claim 4.)

i. Said hub connection includes a pocket 54 in said frame bracket receiving said hub with said hub being removable from said pocket to be inverted 180 degrees about said secondary radial and reinserted into said pocket to position said primary radial relative to said secondary radial whereby said angular position of said adjustment lever may be adjusted by multiples of said offset angle (claims 5, 23.)

j. Said torsion bar connection includes a hexagonal head on said torsion bar and a hexagonal socket in said hub to receive said hexagonal head of said torsion bar whereby said first angular increments are equal (Fig. 7) (claims 6, 24, 32.)

- k. Said indexing system includes at least one tooth extending radially from said hub and a tooth cavity in said frame bracket for receiving said at least one tooth (Fig. 9) (claims 10, 28, 33.)
- l. Said at least one tooth of said hub presents a generally rectangular configuration (Fig. 9) (claim 11.)
- m. Said plurality of said teeth and said plurality of said tooth cavities are disposed on different radials than said first angular increments between said hub and said torsion bar (Fig. 9) (claim 12.)
- n. At least one tooth cavity presents a generally triangular configuration having two sides and a rounded bottom interconnecting said two sides (Fig. 6) (claim 16.)
- o. Said one of first angular increments defines a primary radial and one of said second angular increments defines a secondary radial, said primary and secondary radials being offset from one another by an offset angle (Fig. 9) (claim 22.)
- p. A hub 64 selectively connectable to said adjustment member and having a torsion bar connection for direct connection to a torsion bar at a plurality of primary drive positions at first angular increments relative to one another; and a hub connection between said hub and the frame bracket 54 to position said hub angularly relative to the frame bracket and for allowing said hub to be selectively removed and inverted 180 degrees and reconnected to said frame bracket (claim 31.)

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3. Re claims 1-12, 16, 20-28, and 31-34, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the torsion bar suspension having an adjustment lever of Yonemoto to include an independent hub operatively disposed between and directly interconnecting the torsion bar connection and the adjustment member as taught by Kataoka so as to provide finer adjustment increments (col 5, lin 12-24).

4. Re claims 7-9, 25-27, and 34, Kataoka discloses the claimed inventions except neither first and second angular increments nor the number of teeth and teeth cavities are specified. It would have been an obvious matter of design choice to select appropriate first and second angular increments and a number of teeth and teeth cavities so as tailor torsion spring adjustability to specific vehicle models and operating conditions, and since applicant has not disclosed that specific angular increments or number of teeth solve any stated problem or is for any particular purpose and it appears that the invention would perform equally as well with other incremental combinations and numbers of teeth.

5. Re claims 3-4, 12, 21-22, and 31, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the torsion bar suspension having offset angular increments of Yonemoto to include offset angular increments as taught by Kataoka so as to provide an additional adjustment option and so as to offer finer adjustment capabilities (col 5, lin 12-24.)

Allowable Subject Matter

6. Claims 13-15, 17, and 29-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

7. Applicant's arguments filed 22 November 2006 have been fully considered but they are not persuasive.

8. Applicant argues that the references of Yonemoto and Kataoka represent divergent teachings, drawing reference to the lever arm design shown in the prior art of Kataoka. Examiner disagrees and affirms that Kataoka incorporates the lever arm design as prior art only to illustrate that the invention disclosed requires less space than the lever arm design. In a design where space is not a top constraint to the adjuster mechanism design, it would be perfectly feasible for one of ordinary skill in the art to modify the lever arm design of Yonemoto to incorporate an independent hub with the purpose of allowing finer adjustment increments as taught by Kataoka (col 5, lin 12-24). For example, figures 4 and 5 of Yonemoto shows the general operating range of the lever arm, which appears to be around +40deg/-0deg (CCW positive). Figure 3 of Yonemoto shows a torsion bar connector (TBC) with 7 teeth, which would allow for approximately 51deg/increment. This combination would allow for the following adjustment ranges:

- q. TBC at tooth 0, lever adjustment only: +0deg – +40deg

- r. TBC at tooth +1 with lever adjustment: +51deg – +91deg
- s. TBC at tooth –1 with lever adjustment: -51deg – -11deg

It can thus be seen that there are gaps in the adjustment ranges. An obvious way to correct this would be to simply increase the number of teeth on the TBC, however, certain foreseeable design constraints such as overstressing of fine TBC teeth or designing to fit a common component or industry standard may render increasing the number of teeth unrealistic. In such cases one of ordinary skill in the art reviewing these two references would find it obvious to combine the inventions to overcome the gaps in adjustable ranges and the exemplary design constraints.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

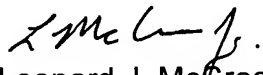
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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard J. McCreary, Jr. whose telephone number is 571-272-8766. The examiner can normally be reached on 0700-1700 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Dickson can be reached on 571-272-6669. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Leonard J. McCreary, Jr.
Examiner
Art Unit 3616


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2/1/07